IN THE CLAIMS

The following claim listing replaces all prior listings and versions of the claims:

COMPLETE LISTING OF THE CLAIMS:

1. (Currently amended) A system for implementing a virtual solar cell, comprising:

a data detector, including ~~a measurement~~ an insolation sensor, [[and]] adapted to collect external environment data;

a controller configured to receive ~~for receiving~~ real-time data from one of the data detector and a user based on an operating mode, to classify ~~classifying~~ the received data in a predetermined format, to transmit the classified data to a data logger ~~logging unit~~, to generate ~~generating~~ a voltage-current model having the same effect as that of an actual solar cell on the basis of the received data, and to generate ~~generating~~ a pulse width modulation signal for controlling a power converter according to the voltage-current model[[;]],

wherein:

the power converter ~~for converting~~ is adapted to convert input power in response to the pulse width modulation signal to provide power to a load[[;]], and

the data logger ~~logging unit for communicating~~ is adapted to communicate with the controller or the data detector and to store the ~~according to a predetermined communication method, and storing~~ data received from the controller or the data detector.

2. (Currently amended) The system ~~for implementing a virtual solar cell as claimed in~~ according to claim 1, wherein the data detector further includes a unit cell solar battery.

3. (Currently amended) The system ~~for implementing a virtual solar cell as claimed in~~ according to claim 1, wherein the ~~measurement sensor includes~~ data detector comprises at least

one of a temperature sensor~~, insolation sensor or~~ and a wind velocity sensor.

4. (Currently amended) The system ~~for implementing a virtual solar cell as claimed in~~ according to claim 1, wherein the data logger ~~logging unit~~ classifies data by at least one of a time, a place and a solar cell manufacturer ~~manufacturers~~ to store the data.

5. (Currently amended) The system ~~for implementing a virtual solar cell as claimed in~~ according to claim 1, wherein the controller is further configured to generate ~~generates~~ the voltage-current model on the basis of the real-time data received from the data detector or from previously stored data received from the data logger ~~logging unit~~.

6. (Currently amended) A method for implementing a virtual solar cell, comprising:

~~allowing a controller to receive data from the outside;~~

receiving external environmental data from one of a data detector and a user interface based on an operating mode;

classifying the received data in a predetermined format ~~or stores it~~;

generating a voltage-current model for obtaining an output characteristic of an actual solar cell on the basis of the received data;

performing a current control according to the generated voltage-current model;

generating a pulse width modulation signal according to a result of the performed current control; and

controlling a power converter in response to the pulse width modulation signal.

7. (Currently amended) The method ~~for implementing a virtual solar cell as claimed in~~ according to claim 6, wherein the external environmental data ~~received by the controller~~ includes at least one of a temperature data, an insolation data and an output characteristic data of ~~a unit~~ the actual solar cell.

8. (Currently amended) The method ~~for implementing a virtual solar cell as claimed in~~ according to claim 6, wherein~~, in the step of~~ classifying comprises classifying the received data ~~or storing the data, the data is classified~~ by at least one of a time, a place and a solar cell manufacturer ~~and stored~~, the method further comprising:

storing the classified data.

9. (Currently amended) The method ~~for implementing a virtual solar cell as claimed in~~ according to claim 6, wherein ~~in the step of~~ generating ~~the~~ a voltage-current model~~, the controller generates~~ comprises generating the voltage-current model on the basis of one of a real-time data received from a data detector or arbitrary data inputted by a user ~~through a predetermined method~~.

10. (Currently amended) The method ~~for implementing a virtual solar cell as claimed in~~ according to claim 9, wherein the arbitrary data inputted by the user comprises inputting data using ~~predetermined method is a method of inputting data through~~ a user interface screen.

11. (New) The system according to claim 1, wherein the controller is further configured to generate the voltage-current model on the basis of one of a real-time data received from the

data detector or arbitrary data inputted by a user.

12. (New) The system according to claim 11, wherein the arbitrary data inputted by a user comprises at least one of a temperature data, insolation data, a voltage data, a current data, an open voltage data, and a short-circuit current.

13. (New) The system according to claim 12, wherein the short-circuit current corresponds to a maximum point data.

14. (New) The system according to claim 1, wherein the real-time data inputted by a user comprises at least one of a temperature data, an insolation data, a voltage data, a current data, an open voltage data and a short-circuit current data.

15. (New) A method for implementing a virtual solar cell in one of two modes, a first mode including implementing the virtual solar cell on a basis of at least one of an actually determined temperature, insolation and manufacturer, a second mode including implementing the virtual solar cell on a basis of at least one of a temperature data, an insolation data and a manufacturer data input in real-time by a user, the method comprising:

receiving environmental data from one of a data detector and a user interface;

classifying the received data in a predetermined format;

generating a voltage-current model for obtaining an output characteristic of an actual solar cell on the basis of the received data;

performing a current control according to the generated voltage-current model;

generating a pulse width modulation signal according to a result of the performed current control; and

controlling a power converter in response to the pulse width modulation signal.